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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/183,789	10/30/1998	VALERIE MARTELANGE	L0461/7047	3523

7590 06/02/2004

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EXAMINER	
HARRIS, ALANA M	
ART UNIT	**PAPER NUMBER**
1642	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/183,789	MARTELANGE ET AL.	
	Examiner	Art Unit	
	Alana M. Harris, Ph.D.	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,8,9,18,19,40,41,43 and 50-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8* is/are allowed.

6)☒ Claim(s) *1,9,18,19,40,41,43 and 50-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments and Amendment

1. Claims 1, 8, 9, 18, 19, 40, 41, 43 and 50-60 are pending.

Claims 1, 9, 43 and 60 have been amended.

Claims 20, 24, 28, 35, 38, 45 and 47 have been cancelled.

Claims 1, 8, 9, 18, 19, 40, 41, 43 and 50-60 are examined on the merits.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Withdrawn Objection

Specification

3. Applicants have submitted copies of the NCBI sequence publications indicating the date of entry into the NCBI database and later updated entries of the sequences. These sequences correspond to GenBank accession numbers U89672, AA213817 and AA213817 or SEQ ID NO: 45, 46, and 47, respectively in claims 1, 9, 43 and 60. The sequence identifier numbers are not regarded as new matter in light of Applicants assertion that "[e]ach of the sequences added to the application is identical to the sequence] of its corresponding GenBank accession number that was available on the date of filing of the instant application.", see Remarks submitted March 15, 2004, bridging paragraph of pages 13 and 14.

Withdrawn Rejection

Claim Rejections - 35 USC § 112

4. The rejection of claims 1, 9, 18, 19, 43-56 and 58-60 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in light of Applicants' submission of NCBI sequence publications.

New and Maintained Grounds of Rejection

Claim Rejections - 35 USC § 112

5. The rejection of claims 1, 9, 18, 19, 40, 50-56, 59 and 60 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is maintained.

Applicants argue reiterate the basic requirements of written description and expound on the *Lilly* case. Applicants assert that they "...have provided a written description of the claimed sequences, specific stringent hybridization conditions, and descriptions of the degenerate features of the genetic code." Applicants state "one of the ways the art routinely identifies nucleic acid molecules is by the ability of the nucleic acid molecules to hybridize to a particular nucleotide sequence. Hybridization conditions in combination with a reference sequence provide a precise definition of the claimed hybridizing nucleic

acid molecules by physical properties that satisfy the criteria set forth by the court...." Applicants further state that "[a]s one of ordinary skill in the art knows, the claimed molecules must be sufficiently like the reference sequence isolated form sarcoma cells to hybridize under the specifically defined set of stringent hybridization conditions."

Applicants are in disagreement with the Examiner in regard to variants. "The examiner states on page 4 of the Office Action [mailed December 11, 2003] that no written description is provided for variants, which would be included in the claimed genus. Applicants respectfully disagree and assert that variants per se are not claimed but rather the claimed variants include only minor nucleotide changes in the nucleic acids provided. " Applicants conclude their arguments with the assertion "...that those of ordinary skill in the art would fully understand and recognize that Applicants were in possession of the molecules that fall within the claimed genus...". These arguments and points of view have been carefully considered but found to be unpersuasive.

Applicants' claims read on a plethora of nucleic acid molecules which are capable of binding under stringent conditions to the nucleotide sequences set forth in claims 1, 9, 40 and 60, as well as read on undefined complements. Claims 41, 43, 57 and 58 include language that sets forth portions and small fragments of larger molecules. These claims have not been adequately described to convey to one of ordinary skill in the art that Applicants were in possession of the entire genus. There is insufficient information regarding which particular nucleotides are considered germane to the claimed invention. "For

inventions in an unpredictable art, adequate written description of a genus which embraces widely variant species *cannot* be achieved by disclosing only one species within the genus. Description of a representative number of species does not require the description to be of such specificity that it would provide individual support for each species that the genus embraces.", see 1242 OG 174, first column, section (2). Applicants seem to rely on the fact that nucleotides must hybridize under stringent conditions. That condition allows the binding of many sequences to Applicants target sequences. In the application at the time of filing, there is no record or description which would demonstrate conception of all the claimed nucleic acids other than those expressly disclosed which may or may not be capable of functioning in the manner suggested by the specification. Therefore, the claims fail to meet the written description requirement by encompassing sequences, which are not described in the specification.

6. Claims 1, 9, 18, 19, 40, 41, 43, 50-60 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicants claims are broadly drawn to nucleic acid molecules that are portions, complements and unique fragments of SEQ ID NO: 1, 38, 40 and 43, which are comprised within compositions, kits, vectors and host cells and consequently are produced. These portions, complements and fragments are to be contained in compositions that reduce the expression of tumor associated

nucleic acid *in vitro*, as well as *in vivo* as suggested by the specification, see page 10, lines 9-19. However, all of these fragment molecules are more than likely not immunogenic thereby not effective in the treatment of cancer. It is not clear if any portion of the sdph3.10 (SAGE) and sdp3.5 can be used to induce a variety of cytokines that affect general host responses or in the enhancement of any immunological response required for treatment. The specification has not presented evidence of any portion, fragment, complement of tumor associated polypeptide protein encoded by SAGE and sdp3.5 nucleic acid molecules. Furthermore, the specification clearly distinguished how one of ordinary skill in the art could identify the presence of a unique, highly antigenic protein or how to use them solely on the basis of stringent hybridization. There is a dearth of extensive chemical characterization of the structure of these broadly claimed portions, fragments and complements. This is in fact necessitated in order to elucidate its effectiveness as an immunogenic portion capable of establishing an immunogenic response.

Applicants have not defined what nucleic acid molecules would explicitly code for a sarcoma associated gene product, nor presented objective evidence that supports the use of these portions in assays, for example that analyze either T-cell or antibody responses of cancer patients against autologous cancer cells or define predicted immunogenic epitopes. It is not clear that any portion of Applicants' nucleic acids and encoded proteins would even generate a modest immune response or how to generate relatively potent immune responses. Hence, there is lack of instruction in the specification enabling one skilled in the

art to make and practice the invention commensurate within the scope of the claim utilizing the undefined and uncharacterized portions of a SAGE and sdp3.5. The specification provides insufficient guidance with regard to these issues and provides no working examples, which would provide guidance to one skilled in the art. For the above reasons, it appears that undue experimentation would be required to use the claimed invention.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1, 9 and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by the 1997/1998 Stratagene catalog (page 118, 1997/1998). The 1997/1998 Stratagene catalog discloses the Prime-It® II Random Primer Labeling Kit containing an instruction manual and hexanucleotides containing all possible 6-nucleotide sequences and would be capable of hybridizing under stringent conditions to nucleotide sequences, SEQ ID NO: 1, 38 and 43.

9. Claims 1, 9, 18, 19, 50 and 59 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent number 5,880,102 (filed January 17, 1995). Sequence 1 of U.S. Patent #5,880,102 discloses nucleic acid molecules and a complement which hybridize under stringent conditions to a nucleotide sequence, SEQ ID NO: 38 and inherently would code for a sarcoma associated gene product, wherein the unique fragment excludes nucleic acid molecules completely composed of the nucleotide sequences set forth as SEQ ID NO: 45 and 46. This fragment is operably linked to a promoter within an expression vector and transformed or transfected into an isolated host cell such that the insert is expressed and the molecule produced, see columns 1 and 2.

Allowable Subject Matter

10. Claim 8 is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alana M. Harris, Ph.D. whose telephone

number is (571) 272-0831. The examiner works a flexible schedule, but can normally be reached between the hours of 7:00 am to 4:30 pm, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Y. Chan can be reached on (571) 272-0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALANA M. HARRIS, PH.D.
PRIMARY EXAMINER

Alana M. Harris, Ph.D.
27 May 2004